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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,895	02/27/2004	Naoki Toyoshima	303.883US1	9317

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EXAMINER

CABRERA, ZOILA E

ART UNIT	PAPER NUMBER
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2125

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/789,895

Applicant(s)

TOYOSHIMA ET AL.

Examiner

Zoila E. Cabrera

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-60 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1, 11, 18 and 24, are directed to a method of detecting conditions, in which claims recite measuring fabrication data, determining, storing, analyzing and examining the analysis, however no useful, concrete, and tangible result is produced such as using the analysis for control. Claims 2-10, 12-17, 19-23 and 25-28 are included in this rejection because of their dependency. Claims 29, 39, 45 and 51, are directed to a method of responding to conditions, in which claims recite measuring fabrication data, determining, storing, analyzing, comparing the analysis and responding to the comparison, however no useful, concrete, and tangible result is produced such as using the analysis for control. Claims 30-38 40- 44, 46-50 and 52-60 are included in this rejection because of their dependency.

Please note that the claims are still in the "determining", "comparing" steps.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 9 and 37, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-14, 17-24, 26-42, 45-51, 53-60 are rejected under 35 U.S.C. 102(e) as being anticipated by **Monette et al. (US 2003/0102367 A1)**.

As for claims 1, 11, 18, 24, 29, 39, 45, 51, **Monette** discloses

A method for detecting conditions in an electronic device fabrication facility, comprising: measuring fabrication data (Fig. 8, testing apparatus); determining the route or exact route a workpiece follows during fabrication ([0183]; Fig. 8 routing device); storing measured data relevant to the route the workpiece followed or actually followed

during fabrication in a data set of the workpiece ([0215]; [0183]); analyzing the data set of the workpiece; and determining current conditions using the analysis ([0183];[0170];[0215]); responding to the comparison ([0143]; [0133]-[0134]).

As for claims 2-10, 12-14, 17, 19-23, 26-28, 30, 38, 40-42, 46-50, 53-54,

Monette further discloses:

2. (Previously Presented) The method of claim 1, wherein the route a particular workpiece follows is a subset of the entire manufacturing process (0183);[0191]).

3. (Previously Presented) The method of claim 1, wherein determining includes; identifying operations that are linked in some manner; determining subdivisions of the identified operations; and developing a listing of all possible routes through the subdivisions of the operations that workpieces may traverse during fabrication ([0130]-[0131]).

4. (Previously Presented) The method of claim 3, wherein operations includes machines, chambers, processes associated with the route the workpiece follows (Fig. 8).

5. (Original) The method of claim 3, wherein the manner of linking is by physical location ([0183]).

6. (Original) The method of claim 3, wherein the manner of linking is by machine type ([0208];[0216]).

7. (Original) The method of claim 3, wherein the manner of linking is by time of processing ([0047];[0091]).

8. (Original) The method of claim 3, wherein the linking is by any other condition relevant to the fabrication process ([0091]).

9. (Previously Presented) The method of claim 3, wherein the determining the subdivisions includes identifying all parts of the operation, machine, process, chamber and the like that have a substantially similar end product ([0102]-[0119]).

10. (Previously Presented) The method of claim 3, wherein all possible routes only includes probable routes through the subdivisions ([0130]-[0131]).

12. (Original) The method of claim 11, wherein the fabrication data items are measured from production data sources (Fig. 8).

13. (Original) The method of claim 12, wherein the production data source is a test probe (fig. 8).

14. (Original) The method of claim 12, wherein the production data source is a parametric measuring device ([0215]).

17. (Original) The method of claim 12, wherein the production data source includes any other data source that is relevant to the fabrication process and its condition([0215]).

19. (Previously Presented) The method of claim 18, wherein measured data relevant to the route a workpiece actually followed during fabrication is relevant based on physical proximity to the route ([0183]).

20. (Previously Presented) The method of claim 18, wherein measured data relevant to the route a workpiece actually followed during fabrication is relevant based manufacturing result ([0183]).

21. (Original) The method of claim 18, wherein the data processing device is a computer system containing a relational database on a storage device and executed on a processor (Fig. 9).

22. (Previously Presented) The method of claim 18, wherein storing measured data in a data processing device includes: adding a data item from the measured route fabrication data to the data set of the workpiece; and relating the added data item to the previously stored data items by some point of data commonality ([0091]).

23. (Original) The method of claim 22, wherein the point of data commonality is based on time([0091]).

26. (Original) The method of claim 24, wherein the analysis is a trend analysis([0135]).

27. (Original) The method of claim 24, wherein the analysis is a correlation study([0133]-[0134]).

28. (Original) The method of claim 24, wherein examining includes comparing the analysis of the data set of the workpiece to expected conditions([0133]-[0134]).

As for claims 30-38, 40-42, 46-50, 53-54, the same citations applied to claim 2-10, 12-14, 19-23, and 26-27, above apply as well for these claims.

As for claims 55-60, Monnette discloses:

55. (Original) The method of claim 51, wherein responding includes: alerting a user when the comparison shows an unexpected condition([0135]).

56. (Original) The method of claim 55, wherein the alerting is by visual cues on an output device of the data processor([0135]).

57. (Original) The method of claim 55, wherein the alerting is by the data processor sending a message to the user of an unexpected condition([0141]).

58. (Original) The method of claim 55, wherein the data processing device non-manually halts production when an unexpected condition occurs(0143)).

59. (Original) The method of claim 51, wherein responding includes: **not** alerting a user when the comparison shows expected conditions in the fabrication facility ([0135]).

60. (Original) The method of claim 51, wherein responding includes: non-manually continuing fabrication when the comparison shows expected conditions in the fabrication facility (Fig. 8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-16, 25, 43-44 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Monette et al. (US 2003/0102367 A1)** in view of Levy (US 2002/0188417 A1)

As for claims 15-16, 25, 43-44 and 52, **Monette** discloses the limitations of claims 11, 12, 24, 39-40 and 51 above but fails to disclose that the film thickness or critical dimensions are being measured and that the analysis is a statistical analysis.

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However, Levy discloses such limitations (Fig. 10, Abstract). Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the teachings of **Monette** with the system of Levy because it would provide an improved system for monitoring semiconductor fabrication process (Abstract).


Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning communication or earlier communication from the examiner should be directed to Zoila Cabrera, whose telephone number is (571) 272-3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. Additionally, the fax phones for Art Unit 2125 are (571) 273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Zoila Cabrera
Primary Examiner
1/25/07


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01/25/07